Translation

PCT/JP2003/007827

ENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SK03PCT68	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/JP2003/007827	International filing date (*day/month/year*) 19 June 2003 (19.06.2003)	Priority date (*day/month/year*) 03 July 2002 (03.07.2002)
International Patent Classification (IPC) or national classification and IPC H01L 25/00, 23/12, H01P 1/12		
Applicant SONY CORPORATION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 8 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☒ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand 21 October 2003 (21.10.2003)	Date of completion of this report 09 June 2004 (09.06.2004)
Name and mailing address of the IPEA/JP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/JP2003/007827

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:
pages 1-29, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☒ the claims:
pages 2-7,12-17,20,21,23-27, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1,10,11,19,22, filed with the letter of 26 March 2004 (26.03.2004)

☒ the drawings:
pages 1-27, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☒ the claims, Nos. 8,9,18

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International [redacted]ation No.
PCT/JP03/07827

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	3-6, 10-17, 19-27	YES
	Claims	1, 2, 7	NO
Inventive step (IS)	Claims	4, 11-17, 19-27	YES
	Claims	1-3, 5-7, 10	NO
Industrial applicability (IA)	Claims	1-7, 10-17, 19-27	YES
	Claims		NO

2. Citations and explanations

Claims 1, 2, 7

Document 1 [EP, 1069616, A (SONY CHEMICAL CORPORATION), 17 January 2001 (17.01.01), [0052]-[0077], [0103]-[0119]] describes a module board device comprising a moisture-resistant first organic board having a conductor pattern formed on the major surface and having one or more element body mounted thereon and a second moisture-resistant organic board having a recess corresponding to the mounting region of the aforesaid element body in the surface thereof bonded to the aforesaid first organic board; in a state where the aforesaid second organic board is bonded to the aforesaid first organic board, the aforesaid recess defines an element body accommodation space for sealing the aforesaid element body and maintains moisture-resistant characteristics and oxidation-resistance characteristics of the element body storing space section. Document 1 also describes a constitution wherein one layer or more are build up wiring layers.

Document 1 does not describe a manufacturing method wherein "an insulating resin layer provided on the second major surface of at least one of a first organic board and a second organic board is polished and made flat," but the specific constitution obtained by this manufacturing method is simply a "flat surface," so a constitution that is the same as this constitution appears to be described in document 1.

Therefore the invention described in claims 1, 2, and 7 is one that forms part of the module board device described in the aforesaid document 1, and is not novel.

Claims 3, 5

Document 1 describes providing a shield layer in the element mounting region of a first organic board.

Document 2 [JP, 2001-291817, A (SONY CORPORATION), 19 October 2001 (19.10.01), [0026]-[0037], [0045]-[0052], Fig. 1, Fig. 2 (document cited in the ISR)] describes technology that provides a shield layer inside the recess.

Employing technology that provides a shield layer inside the recess as described in document 2 in the invention described in document 1 in order to improve shield performance would be obvious to a person skilled in the art.

Claim 4

The documents cited in the ISR neither describe nor suggest art for a module board constitution wherein the shield layer consists of at least one layer or more of a silicon oxide layer, silicon nitride layer, silicon carbide layer, boron nitride layer, or diamond-like carbon layer that can be formed in a film under low-temperature conditions.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box V.2:

Claim 6

Document 3 [CD-ROM of the specification and drawings annexed to the written application of Japanese Utility Model Application No. 792/1992 (Laid-open No. 59847/1993) 06 August 1993 (06.08.93), [0016]] pertains to integrated circuit module technology, and describes filling the element accommodation section with an inert gas in order to improve sealing characteristics.

Adding the technique of filling the element accommodation section with an inert gas in order to improve sealing characteristics as described in document 3 to the module board described in document 1 would be obvious to a person skilled in the art.

Claim 10

Document 4 [EP, 1061577, A (MURATA MANUFACTURING CO., LTD.), 20 December 2000 (20.12.00), [0033]-[0037]] describes a module board device constituted as a high-frequency circuit with one or more types of passive elements film-formed and a wiring layer formed by thin film technology or thick film technology in order to reduce noise.

Employing the technology described in document 4 in the invention described in document in order to reduce noise would be obvious to a person skilled in the art.

Claims 11-17, 22-27

Document 1 describes a manufacturing method for a module board device comprising a step of mounting one or more element bodies on the major surface of a first organic board having a conductor pattern formed thereon, and a step of bonding a second organic board having a recess corresponding to the aforesaid element body mounting region on the bonding surface with the aforesaid first organic board to the aforesaid first organic board so that the aforesaid element body is sealed into the element body accommodation space constituted by the aforesaid recess; this maintains moisture-resistant characteristics and oxidation-resistance characteristics of the aforesaid element body storing space section. Document 1 also describes a manufacturing method for a module board device wherein the step of bonding the first organic board and the second organic board comprises a step of gluing an adhesive sheet to the bonding surface of either the aforesaid first organic board and second organic board, a step of positioning and combining the aforesaid first organic board and second organic board, and a step of applying pressure to the aforesaid first organic board and second organic board.

However, the aforesaid document 1 and the documents cited in the ISR neither describe nor suggest a step for polishing and making flat an insulating resin layer provided on the second major surface of at least one of a first organic board and a second organic board.

Claims 19-21

The documents cited in the ISR neither describe nor suggest the constitution of an element body storing section, the constitution of a passive element, the constitution of a high-frequency circuit part, the constitution of a shield layer, or a high-frequency module comprising all of these specific constitutions as described in claim 19.

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date *(day/month/year)*	Filing date *(day/month/year)*	Priority date (valid claim) *(day/month/year)*
JP 2003-100937 A	04.04.2003	26.09.2001	
[E X]			

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure *(day/month/year)*	Date of written disclosure referring to non-written disclosure *(day/month/year)*